Autodesk® Simulation Moldflow® Communicator 2013

What's New in this Release

Revision 2, 06 February 2012.

Autodesk® Simulation Moldflow® Communicator

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Release notes 1

Enhancements are introduced to improve user interface efficiency and display new simulation results.

What's new

New features and enhancements implemented in this product are summarized.

Improved user interface efficiency

Enhancements have been implemented to significantly improve the performance of the graphical user interface.

Improved model load speed	Open, Import and Save operations now complete up to seven times faster. This is particularly noticeable for large models.
Improved model interaction speed	Selection and Layer operations are now faster and use less memory, making interactions with the model more efficient, particularly for large models.
Improved post-processing speed	Post-processing tasks, including result animation, have been optimized for large models.

Crystallization analysis results available for Midplane and Dual Domain analyses of Thermoplastics Injection Molding applications

This release enables support of results generated by a Crystallization analysis performed in Autodesk Simulation Moldflow Insight.

In addition to the thermal effect on the crystallization process, Crystallization analysis accounts for the effects of flow on crystallization of the material by relating excess free energy and flow-induced orientation to crystallization kinetics.[1] In turn, the crystallization of the material influences the flow analysis, including changes in the modeling of viscosity, pvT, solidification, the inclusion of latent heat in the energy equation, and the orientation effect on shrinkage.

[1] This Flow-Induced Crystallization model is the subject of a United States Patent application (R. Zheng, P.K. Kennedy, and R.I. Tanner), and Autodesk holds an exclusive license for use of this model.

The effect on the predicted mechanical properties (including orientation) then influences subsequent shrinkage (and therefore, warpage) predictions.

Results specific to Crystallization analysis include **Crystallization: Crystalline orientation factor**, **Crystallization: Relative crystallinity**, **Crystallization: Average relative crystallinity**, elastic modulus including crystallization effects in the first and second principle directions (**Crystallization: Mechanical properties E11** and **Crystallization: Mechanical properties E22**), and **Crystallization: Final relative crystallinity**.

Transient Cool (FEM) results available for Dual Domain models and additional molding processes

This release expands the feature to include results of analyses performed in Autodesk Simulation Moldflow Insight for Reactive Molding and Microchip Encapsulation processes using 3D analysis technology, and for the Thermoplastics Injection Molding process using Dual Domain analysis technology.

The transient mold temperature analysis options enable you to see how the mold temperature varies with time. The Cool (FEM) solver uses the finite element method to calculate results, using a 3D finite element mesh for the mold.

For each mold temperature option (Transient within cycle; Transient from production start-up; Averaged within cycle) the following new Dual Domain results are available:

- Improper part-mold contact
- Temperature, circuit coolant
- Temperature, core
- Temperature, mold
- Temperature, mold-cavity interface
- Temperature, mold-circuit interface
- Temperature, mold insert
- Temperature, mold-insert difference
- Temperature, mold-mold difference
- Temperature, part
- Temperature, part (profile)
- Temperature, part insert
- Temperature, runner
- Temperature, runner (profile)
- Time to reach ejection temperature, part (profile)

Fiber breakage results available for analyses of long-fiber filled thermoplastic materials

The option to **Calculate fiber breakage** is now available when performing a Fiber orientation analysis in Autodesk Simulation Moldflow Insight, if the selected material is a long-fiber filled composite.

The fiber breakage calculation accounts for the breakage of long fibers that occurs in the feed system and cavity during the molding process. A material is considered to be a long-fiber composite if the initial fiber length is at least 1 mm. Results produced when the fiber breakage calculation is enabled include **Fiber length averaged by number**, **Fiber length averaged by weight**, and **Fiber length probability distribution**.

Moldflow Results file compatibility

Autodesk Simulation Moldflow Communicator 2013 software supports Moldflow Results (*.mfr) files created in the following products.

- Autodesk Simulation Moldflow Adviser 2013
- Autodesk Simulation Moldflow Insight 2013
- Autodesk Inventor Professional[2] 2012 and later
- Autodesk Moldflow Adviser 2010 and later
- Autodesk Moldflow Insight 2010 and later

[2] Only Autodesk Inventor Tooling results are supported.